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PROJECT NO. 22901

Use of Tanks V-1, V-2, and V-3 for Storing, Blending, and Accumulating Waste During Remediation of the V-Tanks

Idaho National Engineering and Environmental Laboratory

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1. Title: Use of Tanks V-1, V-2, and V-3 for Storing, Blending, and Accumulating Waste During Remediation of the V-Tanks

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This EDF outlines the criteria established by EPA for RCRA remediation waste project temporary storage units, and documents how the INEEL will meet the substantive portions of those ARARs for the CERCLA remediation of the V-tanks. As temporary units, Tanks V-1, V-2, and V-3 will be used for (1) continued storage of existing V-tank contents, (2) blending of the V-tank contents to create a homogenous waste feed to the V-tanks treatment system, and (3) accumulation of treated waste from the chemical oxidation/reduction system prior to sending the treated waste to the stabilization system for further treatment. Tank V-9 will not be used to consolidate or store any of the waste from the other tanks, but will be used only for the continued storage of the Tank V-9 contents until those contents can be safely removed and transferred to one of the other tanks. The appropriate criteria for the temporary use of the V-tanks for the purposes of remediation waste is found in 40 CFR 264.553. This EDF outlines the INEEL's approach for meeting these criteria.

6. Review (R) and Approval (A) and Acceptance (Ac) Signatures:
(See instructions for definitions of terms and significance of signatures.)

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12. NRC related? ☐ Yes ☒ No

13. Registered Professional Engineer's Stamp (if required)

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ACRONYMS

ALARA	as low as reasonably achievable
ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
EDF	Engineering Design File
EPA	U.S. Environmental Protection Agency
FFA/CO	Federal Facility Agreement and Consent Order
ICDF	INEEL CERCLA Disposal Facility
IDEQ	Idaho Department of Environmental Quality
IDHW	Idaho Department of Health and Welfare
INEEL	Idaho National Engineering and Environmental Laboratory
LDR	land disposal restriction
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
TAN	Test Area North
TCE	trichloroethylene
TSF	Technical Support Facility
WAC	waste acceptance criteria

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Use of Tanks V-1, V-2, and V-3 for Storing, Blending, and Accumulating Waste During Remediation of the V-Tanks

1. OVERVIEW

This engineering design file (EDF) provides the basis for continued use of the V-tanks for storing, blending, and accumulating V-tank contents during their remediation. This remediation is being conducted under the *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory* (FFA/CO) (DOE-ID 1991) as a project under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The three signatories to the FFA/CO were the U.S. Department of Energy, Idaho Operations Office (NE-ID[a]), the U.S. Environmental Protection Agency (EPA), Region 10, and the State of Idaho Department of Health and Welfare (IDHW). The three, which are collectively referred to as the Agencies, also signed the *Final Record of Decision for Test Area North Operable Unit 1-10* (the 1999 ROD) (DOE-ID, 1999). That document specified that the two sites, Technical Support Facility (TSF)-09 and TSF-18, located at Test Area North (TAN) at the Idaho National Engineering and Environmental Laboratory (INEEL) and referred to as the V-tanks, would be remediated along with the surrounding contaminated soils in accordance with CERCLA (see Figure 1).

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[a] **NE-ID** signifies that U.S. Department of Energy Idaho Operations Office reports to the DOE Office of Nuclear Energy, Science and Technology (NE).

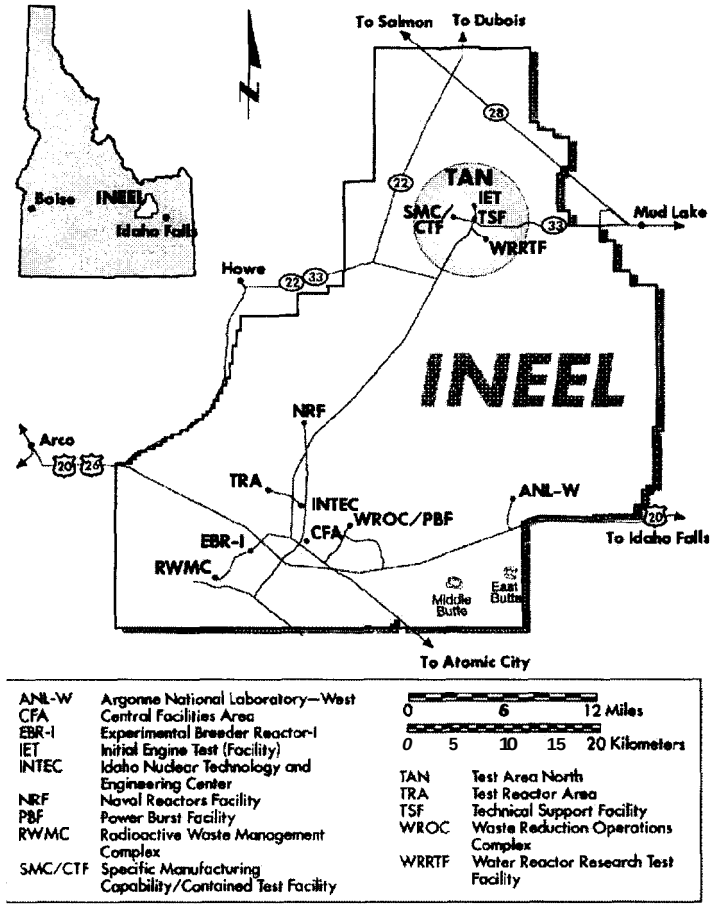

Figure 1. Location of Test Area North at the Idaho National Engineering and Environmental Laboratory.

The Resource Conservation and Recovery Act (RCRA) is described in the ***Code of Federal Regulations*** (CFR), 40 CFR 260.10, which defines remediation waste as "...all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, that are managed for implementing cleanup." Designation of the V-tanks cleanup project as a remediation project under the FFA/CO and CERCLA helps to delineate the potential applicable and relevant or appropriate requirements *(ARARs)*.

EPA specifically established these criteria for sites that were being managed solely to remediate past practices and not receiving newly-generated waste. The V-tanks meet these criteria, as they have either not received any new waste or have been actively managed since the early 1980s. In addition, 40 CFR 264.553 applies to this remediation site, because it provides the criteria for obtaining approval for temporary units for the management of remediation waste. This EDF documents how continued use of the V-tanks during remediation meets 40 CFR 264.553 criteria for designation of the V-tanks as temporary units.

This document will be placed in the Administrative Record and will be incorporated by reference in the ***Record of Decision Amendment for the V-Tanks (TSF-09 and TSF-18) at Test Area North, Operable Unit 1-10*** (the V-Tanks ROD Amendment) (DOE-ID, EPA, and IDEQ 2003). Approval of the V-Tanks ROD Amendment constitutes the CERCLA equivalent of the approval required under RCRA (40 CFR 264.553) for use of the V-Tanks for storing, blending, and accumulating treated waste during the treatment operation, without secondary containment.

2. BACKGROUND

2.1 History

The V-tanks were installed in the 1950s and used to collect radioactive waste during their 30 years of operation. The waste was primarily generated through nuclear research activities. Tank V-9 served primarily as a solids separation unit, while the other tanks (V-1, V-2, and V-3) were designed for accumulation and storage of material awaiting treatment and disposal. Use of all four tanks for accumulation was discontinued in the 1970s; however, the tanks currently continue to store the accumulated waste. Other than level monitoring and sampling, management activities ended after the early 1980s.

Prior to that time, releases of contaminated water to the ground occurred during periodic transfer operations to remove excess water from the V-tanks,. As most contaminants are within the solid phase and remained in the tanks, the spilled water contained only very low concentrations of contaminants. The 1999 ROD (DOE-ID 1999) identified Cs-137 as the only contaminant of concern in the soil above risk-based levels.

Currently, the V-tanks are administratively controlled. The area is fenced and posted with signs that identify it as a CERCLA site. No activities may be performed at the V-tanks site without permission from the INEEL Environmental Restoration Program; and entry into the area requires radiological control precautions. These controls are intended to keep worker exposures as low as reasonably achievable (ALARA), and to prevent the spread of contaminated soil. The controls reduce current and future occupational exposure at the V-tanks to acceptable levels.

2.2 Treatment Approach

The remedy selected in the 1999 ROD is no longer available. The Agencies have selected a new remedy, ex situ chemical oxidation/reduction with stabilization. Originally, the *Conceptual Design Report for Ex Situ Chemical Oxidation/Reduction and Stabilization of the V-Tanks at Waste Area Group 1, Operable Unit 1-10* (INEEL 2003a) proposed treatment of the V-tank contents in a small, batch-scale system. However, results of research on optimizing the treatment approach showed that a multi-stage combination of in situ and ex situ chemical oxidation/reduction may be more implementable. The design of the final treatment process will be documented in the Remedial Design/Remedial Action Work Plan (RD/RAWP) (DOE-ID 2003e), scheduled for completion in 2004. While much of the discussion in this EDF is based on the proposed design in the Conceptual Design Report, the same information is generically applicable to most chemical oxidation/reduction processes. This EDF will be updated in conjunction with the completion of final design in the RD/RAWP.

The INEEL Conceptual Design Report identified the option of using Tanks V-1, V-2, and V-3 for continued temporary storage, blending, and accumulation of the oxidized waste prior to stabilization. Tank V-9 would be used only for the continued storage of the waste now contained in Tank V-9 until that waste can be removed and placed within one of the other tanks.

The requirements to obtain the temporary authorization are found in 40 CFR 264.553 for remediation waste. This EDF documents how the project will meet those criteria. Approval of the V-Tanks ROD Amendment by the Agencies, which incorporates this EDF by reference, provides the CERCLA approval necessary to proceed with the remediation utilizing Tanks V-1, V-2, and V-3 for storage, blending, and accumulation.

3. TEMPORARY UNIT CRITERIA

Requirements for obtaining approval of Tanks V-1, V-2, and V-3 as temporary units for management of remediation waste under the RCRA are provided in 40 CFR 264.553. These temporary units are to be used only within the facility boundary and are to be used solely for the treatment and storage of remediation waste. For CERCLA projects, only the substantive parts of these requirements are applicable. The substantive section of this requirement is section (c).

In accordance with 40 CFR 264.553(c), when establishing standards to be applied to a temporary unit, the Regional Administrator shall consider the following factors:

1. Length of time such unit will be in operation
2. Type of unit
3. Volumes of waste to be managed
4. Physical and chemical characteristics of the waste to be managed in the unit
5. Potential for releases from the unit
6. Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases
7. Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

If the criteria of 40 CFR 264.553(c) are met, then specific design, operating, and closure requirements are specified from 40 CFR 264.553 (d), as follows:

> "The Regional Administrator shall specify in the permit or order the length of time a temporary unit will be allowed to operate to be no longer than a period of one year. The Regional Administrator shall also specify the design, operating, and closure requirements for the unit."

However, because this is a CERCLA-based remediation project, those design, operating, and some of the closure criteria will be developed as part of the Remedial Design/Remedial Action Work Plan, which will be developed to support the V-Tanks ROD Amendment. The site is also subject to the *Hazardous Waste Management Act/Resource Conservation and Recovery Act Closure Plan for the Test Area North/Technical Support Facility Intermedale-level Radioactive Waste Management System* (DOE-ID 2003a), which addresses the closure requirements of 40 CFR 553. An additional year may be approved under 40 CFR 264.553(e) if the administrator determines that continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

4. APPROACH TO MEETING CRITERIA

The following sections detail how the INEEL will meet the criteria necessary to comply with the substantive requirements for obtaining concurrence for authorization of the V-Tanks as temporary units for managing remediation waste.

4.1 Length of Time Unit will be in Operation

Treatment of the waste in the V-tanks via chemical oxidation/reduction with stabilization is expected to take place during the summer of 2006. The waste will remain stored in the tanks until the treatment process is ready for operation. Prior to the transfer of any waste into either Tank V-1, V-2, or V-3, an evaluation of that tank's integrity will be performed. New waste will not be introduced into a tank if it fails tank integrity testing. However, minor repairs may be made to the tank if the Agencies concur that such repairs would enable the tank to pass an integrity check.

Consolidation or blending may occur prior to treatment. Contents of the V-tanks are expected to be consolidated in one or two of the 37,850-L (10,000-gal) tanks (i.e., Tanks V-1, V-2, or V-3). Transfer of some relatively clean water phase from one tank to another may be used to facilitate the blending or homogenizing of the sludge material. (The sludge layer contains most of the contaminants.) This process will leave at least one of the 37,850-L (10,000-gal) tanks empty. That tank will be flushed to remove most of the solids contamination. The empty tank will then be remotely inspected via video camera, and tank integrity will be confirmed. Based upon this inspection and confirmation of tank integrity, the tank will be approved for use as an accumulation tank for receiving the chemically oxidized/reduced waste.

As proposed in the Conceptual Design Report, untreated waste will be removed in batch-size increments from the other storage tanks for chemical oxidation/reduction in the aboveground reaction vessels (see Figure 2). After each batch is oxidized or reduced, the waste will be sent to the accumulation tank for storage. Upon accumulation of sufficient quantities, the waste will be removed in large batches for stabilization in an aboveground unit. All waste is anticipated to be removed from the tanks, and the tanks flushed, prior to the end of calendar year 2006. The surrounding soils will be removed in the following year.

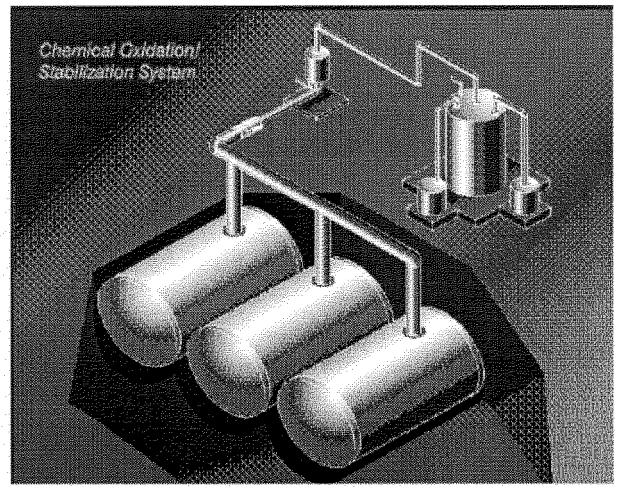

Figure 2. Chemical oxidation stabilization system.

4.2 Type of Unit

The V-tanks are designated as INEEL CERCLA sites TSF-09 and TSF-18. The tanks were part of the Intermediate Level Radioactive Waste Management System at TANand include three 37,850-L (10,000-gal) underground storage tanks (Tanks V-1, V-2, and V-3) and one 1,514-L (400-gal) underground storage tank (Tank V-9), as shown in Figure 3. While there is no indication that there has ever been a release from the V-tanks, contamination has been identified in the surrounding soils. This

contamination resulted from spills during transfer operations of waste from the tanks to another facility for treatment.

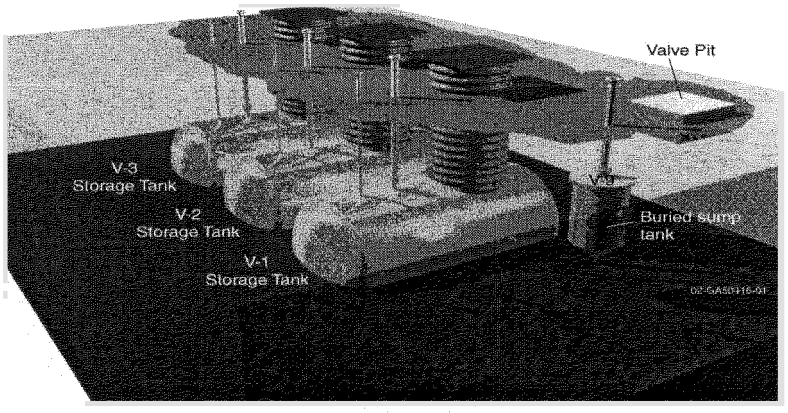

Figure 3. Tanks V-1, V-2, V-3, and V-9

4.3 Volumes of Waste to be Managed

The volume of waste in the V-Tanks is shown in Table 1. There is a total of approximately 45,000 L (12,000 gal) of waste. Approximately 7,000 L (2,000 gal) of sludge mixed with about 38,000 L (10,000 gal) of water. Most of the contaminants are in the sludge. Table 2, which is based on information developed for the Conceptual Design Report, shows the volume of waste after chemical oxidation/reduction, and the volume after the waste has been stabilized. At the end of each batch oxidation/reduction treatment cycle, the pH will be adjusted to 8–10 and the temperature will be reduced to less than 20 C before the waste is placed in the accumulation tank. The chemical oxidation process is expected to increase the total waste volume by approximately 50% (see Table 2). Two tanks may be required for temporary storage of the treated waste. After stabilization, the waste will not be reintroduced into the V-Tanks; rather, it will be placed in containers and shipped to the INEEL CERCLA Disposal Facility (ICDF) for disposal, after verification of meeting the ICDF's land disposal restriction (LDR) and waste acceptance criteria (WAC) limits.

Table 1. V-tank capacity and content volume.

		Volume (L)		
Tank	Capacity (L)	Liquid	Sludge	Total
V-1	37,950	4,400	1,970	6,370
V-2	37,950	4,320	1,740	6,060
V-3	37,950	29,030	2,460	31,490
V-9	1,514	270	950	1,220
Total	115,364	38,020	7,120	45,140

Source: 2003 Technology Evaluation Report (DOE-ID 2003b).

Table 2. Volume and mass increase associated with chemical oxidation/reduction with stabilization

	Volume	Mass	Density

	(L)	(kg)	(kg/L)
Original Waste	45,100	45,300	1.004
After Chemical Oxidation/Reduction	66,800	102,600	1.536
After Stabilization	81,400	153,700	1.888

The volume and mass increases listed in Table *2* are based on information developed for the Conceptual Design Report. These increases in volume and mass will continue to be adjusted and refined as the project moves through title design. As the understanding of the treatment process increases through the planned tests, some of the conservativeness built into these estimates will be eliminated. If laboratory tests indicate that the unregulated oil/grease phase (constituting most of the organic phase in the V-tanks contents) does not have to be completely oxidized to meet the treatment standards, then less oxidant and subsequently less stabilization agent will have to be added. Volume and mass increases could also be reduced by the choice of oxidants. It may be possible to use less oxidant, makeup water, and stabilization agent than currently anticipated, avoiding the currently anticipated overall volume and mass increase.

4.4 Physical and Chemical Characteristics of the Waste to be Managed in the Unit

The V-Tanks contents comprise an aqueous sludge contaminated with radionuclides, inorganic contaminants (including RCRA toxic metals), and toxic organic compounds (including trichloroethylene [TCE], tetrachloroethylene [PCE], and polychlorinated biphenyls [PCBs]). Nearly all of the contaminants in the V-Tanks are found in the solid phase of the sludge.

Table 3 lists the primary contaminants in the V-Tanks that affect the selection of an effective remedy. The table presents information on the overall weighted average concentration of the V-Tank system (the contents of all four tanks combined), as well as the lowest average concentration measured in any single tank for the given contaminant and the highest average concentration measured in any single tank for the given contaminant. These values were used in evaluating the effectiveness and operability of various treatment alternatives.

Treatment of the V-tanks' contents by the selected remedy will significantly reduce the concentrations of the organic contaminants identified in Table 3. Chemical oxidation/reduction is expected to produce a significant reduction in the concentration of these organic compounds. The reduced concentration of organics is expected to lower the risk presented by the current storage and accumulation configuration of the V-tanks.

As noted, the pH and temperature of the oxidized waste will be adjusted to 8–10 and below 20 C respectively. In this manner, the corrosivity of the waste can be controlled at levels that have been verified as being acceptable for the temporary utilization of these tanks, without secondary containment. Secondary containment will be provided for all transfer lines, product tanks, and reactions vessels that are installed during the cleanup activity.

Removing the waste from the accumulation tanks, adding appropriate stabilization agents, and shipping to an authorized disposal facility (such as ICDF) will lower the risk even further. The final waste form after oxidation/reduction and stabilization will require further analysis to ensure compliance with RCRA LDR requirements and disposal facility WAC.

Table 3. Primary contaminants in V-tank contents."

	Concentration[b]		
	Lowest	Highest	Average
Inorganic Contaminants (mg/kg)			
Antimony	0.363	11.5	0.902
Arsenic	0.146[d]	3.05[d]	0.359[d]
Barium	2.11[d]	299	12.4[d]
Beryllium	0.258[d]	20.2	1.11[d]
Cadmium	0.864[d]	21.8[d]	2.34[d]
Chlorides	74.2	397	106
chromium	25.8	1,880	297
Lead	12.1[d]	454	36.1[d]
Mercury	19.2[d]	1,670	79.2[d]
Nickel	4.24[d]	319	16.4[d]
Silver	1.18[d]	522	18.4[d]
Volatile Organic Compounds (VOCs) (mg/kg)			
Tetrachloroethylene (PCE)	36.3	438	118
1, 1, 1-Trichloroethane (TCA)	0.049	1,770	52.2
Trichloroethylene (TCE)	0.234	14,500	426
Semi-Volatile Organic Compounds (SVOCs) (mg/kg)			
Bis-2-ethylhexyl phthalate (BEHP)	338.0	919	454
Aroclor-1260 (a PCB)	9.99	95.9	17.9
Radionuclides (nCi/g)			
Cesium-137	528	4,480	988
Strontium-90	1,510	5,180	1,840
Transuranics[c]	2.03	26.4	4.27

a. The V-Tanks' contents also contain minor concentrations of other elements and compounds that are not included in this list because they do not exceed treatment levels or affect the treatment process. However, the amended remedy is designed to treat all of the tank contents, including these minor constituents.

b. The ''lowest'' concentration is the lowest average concentration measured in any single tank for the given contaminant. The "highest" is the highest average concentration measured in any single tank for the given contaminant. The "average" **is** a weighted average based on the mass of the entire V-Tanks contents (all four tanks combined).

c. The transuranics include plutonium, americium, curium, and neptunium

d. Some of the inorganic concentration values reported in the 2003 Technology Evaluation Report (TER) were incorrectly calculated by the off-Site laboratory that analyzed the waste. Those values have been corrected and the corrected values included in this table. These changes would not have significantly affected the technology evaluation and selection process.

Source: *Technology Evaluation Report for the V-Tanks, TSF-09/19, ut Waste Area Group 1, Operable Unit 1-10* (DOE-ID2003b), with corrections for inorganic contaminants supplied from EDF-3868, *V-Tank Analytical Data: Calculated Averages and* **Y0%** *Upper Confidence* ***Limits*** (INEEL 2003b).

4.5 Potential for Releases from the Unit

The primary concern of the corrosion evaluation was the increased concentration of inorganic chlorides in the chemically-oxidized waste, which can lead to pitting and cracking sufficient to cause the tank shells to leak. Using a worst-case consolidation effort from the conceptual design estimates, the concentration of inorganic chlorides in the waste starts at 122–148 ppm (depending on how the waste is consolidated). This could rise to a concentration of 5374,670 ppm if the bulk of the halogenated hydrocarbons will be oxidized in the initial stages of the chemical oxidation process, prior to oil oxidation, and then drop to 206–1,580 ppm as the last of the oil is oxidized. (Note that the oil may not require oxidation, depending on the results of the further characterization efforts and treatability studies intended to refine the choice of oxidants and operating parameters.)

The primary concern of the corrosion evaluation was the increased concentration of inorganic chlorides in the chemically oxidized waste, which can lead to pitting and cracking sufficient to cause the tank shells to leak. Using a worst-case consolidation effort from the conceptual design estimates, the concentration of inorganic chlorides in the waste starts at 122–148 ppm (depending on how the waste is consolidated), but could rise to a concentration of 537–4,670 pprn (if the bulk of the halogenated hydrocarbons are oxidized in the initial stages of the chemical oxidation process, prior to oil oxidation) before dropping to 206–1,580 ppm (as the last of the oil is oxidized). (Note that the oil may not require oxidation, depending on the results of the further characterization efforts and treatability studies intended to refine the choice of oxidants and operating parameters.)

The preliminary evaluation included an informal discussion of the chloride concentrations with corrosion experts from within the INEEL. Based on these discussions, it was determined that the increased inorganic chloride concentrations resulting from chemical oxidation of the V-Tank waste will not significantly corrode the stainless steel tank shells, provided the following takes place:

1. The pH of the chemically oxidized waste is made basic (pH of 8–10), prior to the oxidized waste being accumulated in the V-Tank

2. The waste is cooled to 20 C before it is returned to the underground V-Tank, and stays below 35 C throughout its entire storage period

3. The chemically-oxidized waste is left in the V-tank for a period not to exceed ***3*** months, prior to being removed and stabilized.

Safe operation of the V-Tanks **as** temporary storage, blending, and accumulation tanks is appropriate if operated under the above, conservative conditions. By meeting these three conditions, the amount of pitting and cracking associated with the chemically oxidized waste will not be sufficient to cause a release of tank contents. Additional assurance could be achieved if current plans to combine all tank contents, prior to chemical oxidation, are carried out. Consolidation of all the contents of all the V-Tanks provides a more homogeneous waste stream with substantially lower peak chloride concentrations than estimated in the worst-case analysis above.

The first two of the three conditions can be easily achieved via process control. The third condition, limiting accumulation to 3 months, may be more difficult to meet. There may be a need to exceed the 3-month period that the chemically-oxidized waste is expected to reside in the tanks. Extending the storage time to 12–15 months would create a higher risk for failure than the 3-month period currently prescribed. However, as documented in the Conceptual Design Report (INEEL 2003a), it is still predicted that pitting and cracking-induced failure of the tanks would not occur during a 12–15 month period.

To reduce the risk associated with this potential failure, the Conceptual Design Report recommends that material compatibility testing be performed to verify these predictions. This is currently being performed by MSE in Butte, Montana, as part of the testing efforts. Preliminary results indicate that inorganic chloride concentrations in simulated surrogate V-tank waste (post-chemical oxidation) are not sufficient to significantly affect stainless steel coupons. These tests will be completed prior to the use of the V-tanks for storing or accumulating chemically oxidized waste. Should significant pitting and cracking be identified, the V-tanks will only be used for storing and blending of current tank contents before entering the chemical oxidation system.

Alternative approaches to the design documented in the Conceptual Design Report include options such as air sparging and ex situ treatment of the volatile organic hydrocarbons. These options would remove the corrosion potential of chlorine. Laboratory studies will continue to determine how best to optimize the treatment process. This EDF will be updated in conjunction with the RD/RAWP to incorporate the final design of the treatment process and address any corrosion concerns.

4.6 Hydrogeological and Other Relevant Environmental Conditions at the Facility that may Influence the Migration of Potential Releases

The V-tanks are located approximately 3 m (10 ft) below ground surface. Approximately 6 m (20 ft) of soil lies between the bottom of the tanks and basaltic bedrock. The V-tanks are situated over the Snake River Plain aquifer, which is approximately 70 m below the ground surface. The soils at TAN are typically clayey silt, with lesser amounts of sand, fine gravel, clay, and silt.

TAN is located near the terminus of the Big Lost River and Birch Creek. Local surface runoff from snowmelt or a heavy thunderstorm may contribute to surface water at TAN. No surface water flow leaves the immediate TAN area. Because the V-Tanks are buried below grade, there would be no surface runoff in any case.

Any release of waste from the V-tanks (as currently configured) is unlikely to migrate a significant distance. The four tanks together contain a total of approximately 38,000 L of water. That quantity is also the approximate volume of any one of the larger V-tanks. When remediation is complete, the tanks will be excavated, removed, and shipped to the ICDF for disposal. As specified in the V-Tanks ROD Amendment, any contaminated soils surrounding the tanks that exceed the acceptable risk threshold will be removed and disposed of at the ICDF.

4.7 Potential for Exposure of Humans and Environmental Receptors if Releases were to Occur from the Unit

Currently, the V-tanks are administratively controlled by the DOE to prevent access. The area is fenced and posted with signs that identify it as a CERCLA site. No activities may be performed at the V-tank site without contacting the INEEL Environmental Restoration Program; and entry into the area requires radiological control precautions. These controls are intended to keep worker exposures ALARA, and to prevent the spread of contaminated soil. The controls restrict current and future occupational exposure at the V-tanks to acceptable levels. The point of nearest public access is 12 km away, and the public is not reasonably expected to be affected by any releases from the below–ground-level V-tanks. There are no environmental receptors other than soil due to the limitation of below-ground-level releases. In the event of any release, the exposure of the workforce during the release and during subsequent cleanup will be controlled to not only regulatory limits, but also in accordance with ALARA standards, using established procedures and controls.

5. SUMMARY

The current plan for the remediation of the V-tanks calls for the continued use of Tanks V-1, V-2, and V-3 for the temporary storage, blending, and accumulation of chemically-oxidized waste to facilitate the remediation of the waste in accordance with the remedy selected in the V-Tanks ROD Amendment. The substantive parts of 40 CFR 264.553 are identified as *ARARs* that provide the regulatory basis for that continued use. The information in this EDF is incorporated by reference into the V-Tanks ROD Amendment. Approval of the V-Tanks ROD Amendment establishes the approach outlined in this EDF as the basis for the continued use of those tanks for storage, blending, and accumulation to facilitate the remedy selected in the V-Tanks ROD Amendment.

6. REFERENCES

40 CFR, Subpart J, 2002, "Assessing the Environmental Effects Abroad of EPA Actions," *Code of Federal Regulations,* Office of the Federal Register, February 2002.

40 CFR 260.10, 2002, "Definitions," *Code of Federal Regulations,* Office of the Federal Register, April 2002.

40 CFR 264.1(j), 2002, "Purpose, Scope, and Applicability," *Code of Federal Regulations,* Office of the Federal Register, April 2002.

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